**IN THE U.S. PATENT AND TRADEMARK OFFICE**

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| Appl. No. | : | 09/653,888 |
| Applicant | : | Cofino et al. |
| Filed | : | 9/1/2000 |
| TC/AU | : | 3625 |
| Examiner | : | Shah, Amee A. |
| Docket No. | : | YOR920000607US1 |
| Title | : | BUSINESS METHOD FOR VISUALLY ANALYZING CLICKSTREAM DATA WITH A PARALLEL COORDINATE SYSTEM |

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450.

**AMENDMENT**

Sir:

In response to the non-final Office Action dated November 28, 2006, please amend the above-identified application as follows.

**Amendments to the Specification**: None.

**Amendments to the Claims:** begins at page 2 of this paper.

**Amendments to the Drawings:** None.

**Remarks/Arguments** begins at page 5 of this paper.

**Appendix**: None.

Applicant believes that the filing of this paper is within the allotted shortened statutory period for reply. However, should the undersigned attorney be mistaken, please consider this a petition for an extension of time that may be required to maintain the pendency of this patent application, and charge Deposit Account No. 50-0510 for any required fee deficiency.

**Amendments to the Claims:**

The following listing of claims replaces all prior claims and listings in this application.

Listing of Claims:

1.(Currently Amended) A method of graphically representing clickstream data of a shopping session on a network comprising:

extracting ~~one or more~~ a plurality of shopping sessions from one or more Web server logs of one or more Web server systems of one or more online stores, said shopping sessions comprising shopping steps and said shopping steps comprising at least one of product viewing, product selection, shopping cart placement and purchase, ~~of one or more Web server systems of one or more online stores~~;

deriving ~~one or more~~ micro-conversions from the ~~one or more~~ plurality of shopping sessions, the micro-conversion comprising a shopper's progress from one shopping step to another;

in response to a request, grouping the micro-conversions according to the shopping steps of the shopping sessions such that each micro-conversion group terminates in the shopping step where its shopping session ends, at least one micro-conversion group terminating at the purchase shopping step and at least one micro-conversion group terminating at other than the purchase shopping step; and

graphically representing, on a computer-generated graphical display, clickstream data from ~~one or more of~~ each of the ~~micro-conversions~~ micro-conversion groups in a first visualization, the first visualization comprising at least three axes representing the shopping steps and ~~one or more~~ lines that each correspond to ~~at least one said shopping session~~ one of the micro-conversion groups, ~~at least one of the lines intersecting less than all~~ wherein one of the axes ~~and terminating at the axis wherein the at least one said shopping session ends~~ represents the purchase shopping step.

2-4.( Canceled)

5.(Previously Presented) A method, as in claim 1, where the first visualization comprises a parallel coordinate system and one or more extension components including one or more parallel axes of sequential events, one or more dependent variable values of timestamps, one or more filters, one or more categorizers, and one or more hyperlink associations.

6.(Previously Presented) A method, as in claim 5, where the parallel coordinate system comprises a series of parallel lines that are placed equidistantly, each parallel line representing a specific dependent variable and dependent variable values being plotted along a respective axis, and an independent variable that is represented by polygonal lines connecting the corresponding dependent variable values.

7-8.(Canceled)

9.(Previously Presented) A method, as in claim 5, where the dependent variable values of timestamps is an assignment of timestamp values as data points to a series of sequential events that are assigned to the equal number of parallel axes in a parallel coordinate system.

10.( Canceled)

11.(Previously Presented) A method, as in claim 5, where the filter is a means to select one or more groups of polygonal lines viewed in the parallel coordinate system.

12.(Previously Presented) A method, as in claim 5, where the categorizer is a parallel axis in the parallel coordinate system for categorizing polygonal lines of the first visualization.

13.(Previously Presented) A method, as in claim 12, where the categorizer includes at least one of the following: referrer Web sites of sessions, internet service providers of sessions, lengths of sessions, methods used to find product information by session, methods used to find service information by sessions, products viewed, services viewed, items placed in a shopping cart, items purchased by sessions, time points of sessions, geographic regions where sessions

originate, age, sex, education, and income of session originators, sales history of owners of sessions, and Web page patterns accessed by one of sessions and owners of sessions.

14.(Previously Presented) A method, as in claim 5, where the hyperlink association is association of at least one hyperlink with the line representing a session, and the line comprises a hyperlink to a Web page that provides additional information of the session.

15.(Previously Presented) A method, as in claim 1, wherein at least the first visualization represents, via dropouts of one or more lines, where the online store loses customers.

16-17.(Canceled)

18.(Previously Presented) A method, as in claim 1, further comprising displaying additional information of one or more sessions on at least one Web page by using at least one hyperlink association.

19-54.(Canceled)

**REMARKS/ARGUMENTS:**

Due to a previous restriction requirement, claims 1, 5-6, 9, 11-15, and 18 are pending. The office action dated November 28, 2006 made the following rejections:

- Claims 1, 5-6, 9, 11-12, 14-15 and 18 under 35 USC 103(a) as obvious in view of Wenig (US 6,286,030), Nareddy (US 6,785,666), Parker v Flook [198 USPQ 193 (1978)], and Yaginuma (US 6,477,538);
- Claim 13 under 35 USC 103(a) as obvious over the references above in further view of Hunt (US 6,223,215).

Interview Summary:

The undersigned representative engaged in a telephone interview with Examiner Shah and supervisor Examiner Jeffrey Smith on February 21, 2007, during which was discussed claim 1 in view of Wenig, Yaginuma, and Parker v Flook. The undersigned summarized the prior prosecution, during which Wenig, Yaginuma, and Hunt were each asserted, and Parker v Flook was asserted to deny allowance despite the claimed display ('graphical representation' in claim 1) not being within any reference or combination thereof. Specifically, the undersigned asserted that Wenig reproduces web pages identically as viewed by an original viewer (col. 5 lines 22-30 given as reference, and an example environment given by the undersigned was an employer reviewing web pages an employee previously viewed on a company computer) and therefore does not graph or chart web activity as claimed; and that the vertical axes of Yaginuma (Fig. 29 cited as an example) represent data mining search criteria so every lateral crossing line must necessarily intersect each and every vertical axis as all other data is never returned from the data mining. The undersigned contended that Nareddy is not seen to cure the previously-asserted shortfalls of the other references as to the display, and indicated frustration that Parker v Flook is again advanced to deny patentability despite lack of the references teaching each element of claim 1. Examiner Smith detailed that the display is seen as akin to Parker v Flook's post-solution activity, and that allowance might be more forthcoming if novel/non-obvious aspects of the invention, which the undersigned asserts lie within the "graphically representing" element of claim 1, were instead recited in a different claim element such as the 'extracting' or 'deriving' elements of claim 1. The undersigned indicated that

Yaginuma includes claims directed to a display. It was agreed that the subject matter which the undersigned asserts as novel/non-obvious would be re-asserted in a claim element other than one directed to a display, and argument presented that such subject matter distinguishes over the cited references, so as to avoid the ongoing disagreement over the proper scope of Parker v Flook.

Remarks:

Advantages of the invention over the prior art are summarized at page 3 lines 7-13: the prior art obscures useful detail information; static displays restrict users to passive interpretation, and weak or lack of connection between purchase data and navigation data limits or undermines the ability to comprehend the website's effectiveness. See for example prior art Figure 7 of this application. The objects of the invention stated at page 3 line 18 to page 4 line 5 relate to showing data, in order that a website designer/operator/analyst might more readily comprehend the site's effectiveness, see information obscured by prior art information summaries, and view data more dynamically. See for example Figure 8 of this application. Whereas a user of this invention will appreciate the advantages in the display of data as compared to the prior art, that display of data arises from how the collected data is mined, manipulated, and sorted prior to being displayed. Claim 1 is independent, and is amended to recite the data manipulation that results in the display which is seen to achieve at least some of the advantages over the prior art stated in the application.

Specifically, claim 1 is amended to add the element:

> in response to a request, grouping the micro-conversions according to the shopping steps of the shopping sessions such that each micro-conversion group terminates in the shopping step where a shopping session ends, at least one micro-conversion group terminating at the purchase shopping step and at least one micro-conversion group terminating at other than the purchase shopping step

Support for this subject matter may be found generally at Figure 6A. A shopping session is a set of events (page 7 lines 8-10, page 8 lines 1-7); sessions are extracted (page 8 lines 13-19, page 9 lines 14-17), and micro-conversions are derived for the sessions (Figure 6, page 14 line

22 to page 15 line 5). Figure 6A and related text (page 15 line 7 to page 16 line 22) detail how the sessions of these micro-conversions are grouped in response to a request {R} (see also page 17 lines 11-17). Other changes to claim 1 are for readability (first and fourth elements), and to remove 'one or more' language where no longer appropriate (first, second and fourth elements). No new matter is added.

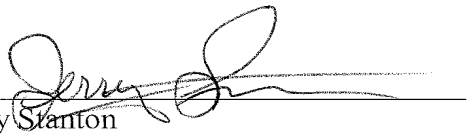
Claim 1 recites grouping micro-conversions by shopping steps. Explanatory claim language recites that each micro-conversion group terminates in the shopping step where the shopping sessions of that group end; one micro-conversion group terminating at the 'purchase' shopping step, and another micro-conversion group terminating at 'other than the purchase' shopping step (e.g., product viewing, shopping cart placement). This is seen to recite, in the added 'grouping' claim element, what the undersigned has consistently asserted as a novel and non-obvious feature of the invention previously recited in the 'graphically representing' claim element. Note also that this feature remains in the 'graphically representing' claim element, since one of the axes represents the 'purchase' shopping step and 'each of the grouped micro-conversions' is graphically represented as a line. Further note that a single group of micro-conversions may, consistent with claim 1, represent multiple shopping sessions all terminating at the same shopping step (see the application at page 7 lines 6-8, a polygonal line can represent a large number of shopping sessions).

As noted in the interview summary above, Wenig reproduces web pages identically as viewed by an initial viewer (col. 5 lines 22-30), and is not seen to group as recited in claim 1, regardless of how those web pages are displayed. Grouping micro-conversions as in claim 1 would appear to obscure the very information Wenig seeks to preserve for the analyst's review (identical screens), so modifying Wenig to achieve claim 1 is not seen as within ordinary skill in the art. The display axes of Yaginuma are seen to represent the search criteria used in its data mining, so all data returned from Yaginuma's data mining necessarily would terminate at the same 'shopping step'; Yaginuma is not seen to group as in claim 1 and to do so would undermine its principles of data mining. Nareddy uses web logs and analyzes event data, but is also not seen to group as in claim 1. Even if Nareddy did derive and group micro-conversions

of shopping steps (not admitted), it is not seen to disclose, teach or suggest the specifically claimed grouping of micro-conversions recited in claim 1 in response to a (singular) request. Hunt is not seen to cure the above shortfalls of Wenig, Yaginuma and/or Nareddy, and the grouping element of claim 1 is not reasonably seen to be a post-solution activity for which Parker v Flook might be relevant. Claim 1 is seen to patentably distinguish over the cited references, alone or in combination with one another.

The claims are now seen to be in condition for allowance. The undersigned welcomes the opportunity to resolve any matters that may remain, or to discuss any further issues with the Examiner, via teleconference at the Examiner's discretion.

Respectfully submitted:



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